RUTGERS
School of Public Health

Course Title: *Managing Hazardous Energy*

Course Number: *ENOH 657*

Course Pre- and Co-requisite(s): *N/A*

Course Instructor: Koshy Koshy, PhD
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Office Hours: *By appointment*

Course Assistant: *None*

Course Website: *canvas.rutgers.edu*

Required Course Text: *Management of Hazardous Energy, Deactivation, De-Energization, Isolation, and Lockout.* Author: Thomas Neil McManus (CRC Press) (Resource #1)

OSHA 2264: Permit Required Confined Space Entry (Workbooks) Developed by the SPH-Center for Public Health Workforce Development (Resource #2)

OSHA 7115: Lockout/Tagout (Workbook). Developed by the USDOL Occupational Safety and Health Administration, Directorate of Training and Education (Resource #3)

OSHA 7100: Machine Guarding (Workbook). Developed by the USDOL Occupational Safety and Health Administration, Directorate of Training and Education (Resource #4)

OSHA 7505: Introduction to Incident (Accident) Investigation (Workbooks). Developed by the USDOL Occupational Safety and Health Administration, Directorate of Training and Education (Resource #5)

Resources #2 to #5 will be provided at no additional cost to the students.

Course Description:

The harnessing of energy from sources and materials containing energy is essential to activity in all societies, regardless of their level of development. Hazardous energy is the type and level of energy that is likely to cause rapid harm. Safety practitioners must be able to recognize errors that may occur and be able to recommend measures to eliminate or minimize the risk posed by these situations.

Students are required to attend the following courses offered by the SPH-Center for Public Health Workforce Development (CPHWD) and complete the required assignments to successfully complete the 3- credit course.

(1) OSHA 2264: Permit-Required Confined Spaces (18 Contact Hours, 3 days)
(2) OSHA 7115: Lockout/Tagout (6.5 Contact Hours, 1 day)
(3) OSHA 7100: Machine Guarding (6.5 Contact Hours, 1 day)
(4) OSHA 7505: Introduction to Incident (Accident) Investigation (6.5 Contact Hours,1 day)

Selected Concentration Competencies Addressed:

1. Apply federal and state regulatory standards which are related to worker (occupational) safety and health protection
2. Develop testable models to validate occupational exposures (one or more agents) and adverse health outcomes (causing injury, disability, or other morbidity or mortality)
3. List current quantitative risk assessment approaches and methods for specific occupational safety and other health hazards

Please visit the Concentration webpages on the School of Public Health's website at sph.rutgers.edu for more information about the curriculum and competencies for our degrees and concentrations.

Course Objectives: *Provide a bulleted list of the objectives of the course (do not present as a paragraph). Begin this section with the following statement:* By the completion of this course, students will be able to:

1. Describe the process for inventorying energy sources to describe specific processes for energy control programs
2. Identify methods of safeguarding machinery with application of OSHA standards.
3. Describe the two major categories of hazards found in confined spaces and develop control measures to reduce their impact
4. Recognize hazards associated with confined spaces and develop permit implementation programs to mitigate and manage potential hazardous energy.
5. Describe the four-step process to conducting an incident investigation and best practice for follow-up response

Course Communication: The instructor will communicate with students primarily through the tools within the Canvas course. If you have a question that you feel may help other students as well, please post your question in the "Class Help: Ask A Question" discussion thread. If you have a personal concern or question you would like to talk about, please email the instructor directly or attend office hours. During the work week, the instructor will aim to respond to personal emails or your posts directed to the instructor within 48 hours. For communications posted/emailed over the weekend, the instructor will try to respond by the end of the business day on Tuesday for most situations. If the instructor is out of town without Internet access, the instructor will post a note in Canvas in Announcements. The goal will be to post grades within seven days of the final due date of the assignment, unless otherwise stated.

Fostering Course Community: The instructor will work to foster community through discussion boards, chat sessions, online activities, etc. Students are encouraged to get to know each other and contribute their particular strengths, expertise, and experience to enrich the class. Working with your classmates, explaining concepts to each other, and interacting with your instructor (and course assistant, if assigned) are the most effective ways to understand the course concepts and succeed in this course. By posting questions on Canvas (rather than via email) the entire class has the benefit of learning from the discussions, so please consider posting your question as a first option.

Canvas Announcements: This course will use Announcements in Canvas to share course information, highlight lessons learned, and send reminders. Be sure you review your notification settings in Canvas so that you receive these Announcements using your preferred contact method. In addition, please be sure to check the Announcements tab at least once each week in the Canvas shell for this course.

Module Schedule: All course deadlines are listed in Eastern Time Zone. Canvas will record all deadlines in this time zone. If you are in a different time zone, plan accordingly.

Discussion Board Guidelines and Expectations: You will utilize readings, videos and other information to inform and engage in the discussion boards. Respect, critical thinking and application of knowledge will guide these discussions. Original posts for Discussions are due by [insert day of week and time due with time zone] and your replies are due [insert day of week and time due with time zone]. The instructions and expectations for the Discussion Board, including a rubric, are posted on Canvas.

Course Requirements and Grading:

>   Students are required to attend four short-courses offered by the SPH-CPHWD. The training sessions are a blend of instructor-led presentations, whole-group and small group problem solving discussions.

Assigned reading and participation in discussions are required to make the course a successful learning experience. Part of the assessment of class participation will be a self-assessment early in the course, so that we can develop collaborative strategies to encourage and maintain high-quality student engagement. In addition, keeping up with assigned readings and class participation will be important for success on the written exams and projects.

Numeric grades from exams, assignments and related class participation will be weighted in the proportions shown below to produce an overall numeric course grade:

Class Participation and In-training exercises
   (Synchronous OSHA Classes)   40%
Homework Assignments   20%
Mid-term examination   15%
Final Assignment   25%

Grading Policy: *94 – 100 A*
         90 – <94 A-
         87 – <90 B+
         84 – <87 B
         80 – <84 B-
         77 – <80 C+
         70 – <77 C
         <70 F

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Course Schedule:

DATE	Classroom Contact Hours	Course Topics	Competencies Addressed	Requirement/ Required Readings	Assessment
9/6/2022- 9/16/2022	asynchronous	Hazardous Energy and Fatal Incidents	List Current quantitative risk assessment approaches and methods for specific occupational safety and health hazards	Review presentation in Module 1 Resource #1: Chapter 1 and 2	**Submit** Homework Assignment #1
Day 1 of 3 (OSHA 2264) 9/19/2022	6.0 hours	Sources of Hazardous Energy and the Nature of Problems	Identify occupational safety and health issues, apply federal and state regulatory standards	Resource #1: Chapter 2 and 7 Resource #2 29CFR 1910 Subpart J and 29CFR 1926 Subpart AA	Complete in-class exercises
Day 2 of 3 (OSHA 2264) 9/20/2022	6,0 hours	Hazards of Confined Spaces and Developing Permitting Programs to Reduce the Risk	Review current risk assessment approaches	Resource #1: Chapter 1 and 7 Resources #2	Complete in-class exercises
Day 3 of 3 (OSHA 2264) 9/21/2022	6.0 hours	Conducting a Confined Space Entry, Designing a Rescue Plan and Elements of Program Evaluation (Resource 1, Ch. 5; Resource 2)	Apply federal and state regulatory standards; develop models to validate occupational exposures	Resource 1: Chapter 8 Resource #2	Complete in-class exercises
OSHA 7505 9/29/2022	6.5 hours	Effective Incident Investigation Programs	Apply regulatory standards to reduce workplace injuries	Resource #1: Chapter 3 and 9 Resource # 5	Complete in-class exercises
OSHA 7115 10/7/2022	6.5 hours	Effectively Isolating and Managing Hazardous Energy	Review risk assessment and control methods to reduce occupational hazards	Resource #1: Chapters 10 and 11 Resource #3	Complete in-class exercises
10/10/2022- 10/14/2022	asynchronous	Biological Systems and Effects of Hazardous Energy on Human Performance	Develop testable models to validate occupational exposures (one or more agents) and adverse health outcomes (causing injury, disability, or other morbidity or mortality)	Review presentation in Module 2 Resource #1: Chapter 3 and 4	**Submit** Homework Assignment #2
		Confined Space Quiz			**Submit** on Canvas
OSHA 7100 **10/27/2022**	6.5 hours	Sources of Pneumatic Energy and Controls	Developing testable models to validate and reduce potential occupational exposures	Resource #1: Chapter 2 Resource #4	Complete in-class exercises
11/28/2022					**Submit** Final Assignment on Canvas.
TBD					Synchronous Meeting to review final assignment

Learning Management System: Canvas will be used throughout the semester for course syllabus, assignments, announcements, communication and/or other course-related activities. It is the student's responsibility to familiarize themselves with Canvas and check it regularly. If you have difficulties accessing Canvas, please inform the instructor and Canvas Support (help@oit.rutgers.edu). Canvas is accessible at canvas.rutgers.edu.

School of Public Health Honor Code: The School of Public Health Honor Code is found in the School Catalog (sph.rutgers.edu/academics/catalog.html). Each student bears a fundamental responsibility for maintaining academic integrity and intellectual honesty in his or her graduate work. For example, all students are expected to observe the generally accepted principles of scholarly work, to submit their own rather than another's work, to refrain from falsifying data, and to refrain from receiving and/or giving aid on examinations or other assigned work requiring independent effort. In submitting written material, the writer takes full responsibility for the work as a whole and implies that, except as properly noted by use of quotation marks, footnotes, etc., both the ideas and the works used are his or her own. In addition to maintaining personal academic integrity, each student is expected to contribute to the academic integrity of the School community by not facilitating inappropriate use of her/his own work by others and by reporting acts of academic dishonesty by others to an appropriate school authority. It should be clearly understood that plagiarism, cheating, or other forms of academic dishonesty will not be tolerated and can lead to sanctions up to and including separation from the Rutgers School of Public Health.

Students with Disabilities: Rutgers University welcomes students with disabilities into all of the University's educational programs. In order to receive consideration for reasonable accommodations, a student must apply for Services by first completing a Registration Form with the Rutgers Office of Disability Services (ODS) at ods.rutgers.edu. The student will also be required to participate in an ODS intake interview and provide documentation. If reasonable accommodations are granted, ODS will provide you with a Letter of Accommodations which should be shared with your instructors as early in your courses as possible.

Commitment to Safe Learning Environment: The Rutgers School of Public Health is committed to helping create a safe learning environment for all students and for the School as a whole. Free expression in an academic community is essential to the mission of providing the highest caliber of education possible. The School encourages civil discourse, reasoned thought, sustained discussion, and constructive engagement. Provocative ideas respectfully presented are an expected result. An enlightened academic community, however, connects freedom with responsibility. The School encourages all students to disclose any situations where you may feel unsafe, discriminated against, or harassed. Harassment or discrimination of any kind will be not tolerated and violations may lead to disciplinary actions.

Reporting Discrimination or Harassment: If you experience any form of gender or sex-based discrimination or harassment, including sexual assault, sexual harassment, relationship violence, or stalking, know that help and support are available. You may report such incidents to the RBHS Title IX Office or to the School of Public Health's Office of Student Affairs. Rutgers University has staff members trained to support survivors in navigating campus life, accessing health and counseling services, providing academic and housing accommodations, and more. If you experience any other form of discrimination or harassment, including racial, ethnic, religious, political, or academic, please report any such incidents to the School's Office of Student Affairs. The School strongly encourages all students to report any incidents of discrimination or harassment to the School. Please be aware that all Rutgers employees (other than those designated as confidential resources such as advocates, counselors, clergy and healthcare providers as listed in Appendix A to Policy 10.3.12) are required to report information about such discrimination and harassment to the School and potentially the University. For example, if you tell a faculty or staff member about a situation of sexual harassment or sexual violence, or other related misconduct, the faculty or staff member must share that information with the RBHS Title IX

Coordinator. If you wish to speak to a confidential employee who does not have this reporting responsibility, you can find a list of resources in Appendix A to University Policy 10.3.12. For more information about your options at Rutgers, please visit Rutgers Violence Prevention and Victim Assistance.

Graduate Student Computer Policy: Students are required to possess a personal laptop, no older than approximately two years, that must meet minimum requirements which may be found online at: sph.rutgers.edu/student-life/computer-support.html

Policy Concerning Use of Recording Devices and Other Electronic Communications Systems: When personally owned communication/recording devices are used by students to record lectures and/or classroom lessons, such use must be authorized by the faculty member or instructor who must give either oral or written permission prior to the start of the semester and identify restrictions, if any, on the use of mobile communications or recording devices.

Policy Concerning Use of Turnitin: Students agree that by taking this course all required papers may be subject to submission for textual similarity review to Turnitin.com (directly or via learning management system, i.e. Canvas) for the detection of plagiarism. All submitted papers will be included as source documents in the Turnitin.com reference database solely for the purpose of detecting plagiarism of such papers. Use of the Turnitin.com service is subject to the Usage Policy posted on the Turnitin.com site. Students who do not agree should contact the course instructor immediately.

Withdrawal/Refund Schedule: Students who stop attending their course(s) without submitting a completed Add/Drop Course form will receive a failing grade. Furthermore, students dropping to zero credits for the semester are considered withdrawn and must submit a completed Leave of Absence form from the School of Public Health's Office of Student Affairs. The School of Public Health refunds tuition only. Administrative and technology fees are non-refundable. You may find the Withdrawal/Refund Schedule on the School of Public Health website at: sph.rutgers.edu/academics/academic-calendar.html

SPH- Center for Public Health Workforce Development (CPHWD) Virtual Classroom Rules

- For the convenience of everyone participating in the training, please mute your microphone when you are not speaking to reduce background noise.

- If you have questions during the training, please use the "chat" feature or "raise hand" feature to let the facilitator know you'd like to be acknowledged.
- Trainees are expected to be engaged in the courses. Make every effort to reduce distractions and interruptions during instruction time. Trainees should not talk to people who are not in the class, take telephone calls, text, surf the internet or read materials unrelated to the class.
- Trainees should eliminate distractions (people interrupting, telephones ringing, excess background noise, etc.)
- The class must be completed in an appropriate setting for learning. Trainees should not connect with a mobile device (phone or tablet).
- Trainees have the right to express themselves and participate freely in an online class. However, they are expected to treat each other and the instructor with courtesy and respect. Offensive or inappropriate language is not to be used in any form of communication (e.g., emails, discussion postings, group projects, submitted assignments). Trainees are allowed to disagree with each other or the instructor but must do so in a civil and respectful manner.
- Online behavior is not always perfect. In fact, it can venture into disrespectful and hurtful areas and needs to be addressed. If you experience any questionable or inappropriate behavior from your fellow course participants, please immediately report this to the course facilitator.
- The Center for Public Health Workforce Development reserves the right to remove a trainee who does not adhere to the rules of the virtual classroom or the Rutgers Student Code of Conduct which may be found at https://sph.rutgers.edu/student-life/code-of-conduct.html

Requirement to Participate in a Virtual Classroom

- A functioning webcam, microphone, and speakers (required)
- Desktop or Laptop Computer (access via smartphone is not allowed)
- Trainees are required to actively participate in the training by engaging in the workshops responding to the instructor and working in teams to solve safety and health issues.
- Trainees must share video of themselves and be visible for the duration of the class.
- Trainees who enter class late, return from break late, or miss a duration of class due to technical problems may not receive a certificate of completion.